

# PATENT ABSTRACTS OF JAPAN

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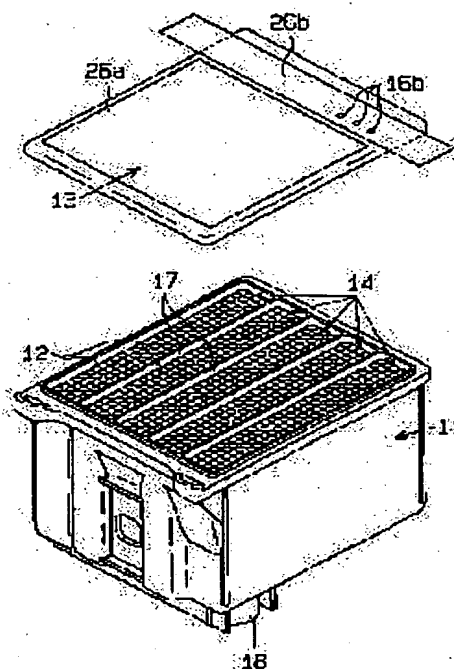
(72)Inventor : SHINADA SATOSHI  
NAKA TAKAHIRO  
KOIKE HISASHI  
YOKOYAMA TOMIO  
ITO KAZUNORI

## (54) METHOD FOR MANUFACTURING INK CARTRIDGE

### (57)Abstract:

**PROBLEM TO BE SOLVED:** To provide a method for manufacturing an ink cartridge in which porous bodies can be easily inserted to a container.

**SOLUTION:** In a state while caught by a plate-like jig 22 from both sides, porous bodies 12 having bottom faces compressed and deformed to a nearly equal shape to a shape of bottom faces of porous body storage chambers 14 are alternately inserted every other chamber in an arrangement direction of the storage chambers 14. A direction of the insertion must be such a direction that makes the bottom face of the porous body 12 nearly parallel to a virtual face 41 connecting an upper end of a projecting part 19 and one end part of the bottom face of the porous body storage chamber 14. The porous bodies 12 are pressed with the use of a pressing device 25 having a similar shape to a shape of an inner face of a lid member 13 by not larger than 2/3 a depth of the porous body storage chambers 14 and not larger than twice a height of a rib 21 of the lid member 13. The lid member 13 is vibration welded to an upper opening of each of the porous body storage chambers 14 within one minute afterwards. The porous bodies can be easily inserted to the container without increasing the number of part items according to this method for manufacturing the ink cartridge.



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**CLAIMS**


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**[Claim(s)]**

[Claim 1] The manufacture method of the ink cartridge characterized by inserting a porosity object from upper surface opening of a container in the manufacture method of the ink cartridge which inserts an abbreviation rectangular parallelepiped-like porosity object in the container of the shape of an abbreviation rectangular parallelepiped which has the ink feed holes which supply ink to an external device where the base of a porosity object is leaned to a container base.

[Claim 2] The manufacture method of the ink cartridge according to claim 1 which prepares the heights which have ink feed holes in the base in a container, and presses a porosity object to the heights concerned.

[Claim 3] The manufacture method of the ink cartridge according to claim 2 which inserts a porosity object in the state where it leaned so that a heights side might become the container which leaned toward the unilateral side side and has arranged the aforementioned heights from the center of the base in a container a path-of-insertion back side.

[Claim 4] the manufacture method of the ink cartridge which puts the side of a porosity object between the container which has the ink feed holes which supply ink to an external device with a tabular fixture, and inserts the porosity object in it -- setting -- the base of a porosity object -- the base configuration of a container, and abbreviation -- the manufacture method of the ink cartridge characterized by performing the aforementioned insertion after carrying out a compression set to the same configuration

[Claim 5] The manufacture method of the ink cartridge according to claim 1 to 4 which includes the \*\*\*\*\* process which stuffs a porosity object into the path of insertion before joining upper surface opening and the covering device material of a container after insertion of a porosity object in the manufacture method of the ink cartridge which joins covering device material to upper surface opening of a container, after inserting a porosity object in a container.

[Claim 6] The manufacture method of an ink cartridge according to claim 5 that the amount of pushing of the aforementioned \*\*\*\*\* process is 2/3 or less [ of the depth of a container ].

[Claim 7] The manufacture method of the ink cartridge according to claim 5 or 6 which is below the double precision of the rib height in which the amount of pushing of the aforementioned \*\*\*\*\* process was prepared in covering device material.

[Claim 8] The manufacture method of the ink cartridge according to claim 5 to 7 characterized by joining covering device material within 1 minute after the end of the aforementioned \*\*\*\*\* process.

[Claim 9] The manufacture method of an ink cartridge according to claim 5 to 8 used for the aforementioned \*\*\*\*\* process that it pushes in and the configuration of a member is the inside and analog of covering device material.

[Claim 10] The manufacture method of an ink cartridge which contains the porosity object over a porosity object receipt room one by one from a specific porosity object receipt room in the manufacture method of the ink cartridge which inserts a porosity object inside a container by the septum at two or more porosity object receipt rooms by which partition formation was carried out.

[Claim 11] The manufacture method of the ink cartridge which inserts a porosity object in another porous room object receipt room which contains a porosity object inside a container at the porosity object receipt room in every other room of the direction of a list of a porosity object receipt room, and next is not inserting the porosity object in three or more porosity object receipt rooms by which partition formation

was carried out at the letter of parallel in the manufacture method of the ink cartridge which inserts a porosity object by two or more septa.

[Claim 12] The manufacture method of the ink cartridge according to claim 10 or 11 which applies the manufacture method according to claim 1 to 9.

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DETAILED DESCRIPTION

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[Detailed Description of the Invention]

[0001]

[The technical field to which invention belongs] this invention relates to the manufacture method of an ink cartridge used for a printer.

[0002]

[Description of the Prior Art] Conventionally, the porosity object represented by sponge was adopted as a member which makes ink hold within an ink cartridge. In order that a porosity object may present capillarity, the fact that it is possible to hold the ink of optimum dose and to supply suitable for an external device by setup of the compressibility of pore size or whole volume etc., that it can manufacture easily and comparatively at a low price, etc. is cited as the reason.

[0003] Moreover, generally, since the configuration of the container of an ink cartridge had the shape of a comparatively simple rectangular parallelepiped, what doubled with the configuration of a container the configuration of the porosity object with which an ink cartridge is filled up was used for it.

[0004]

[Problem(s) to be Solved by the Invention] However, conventionally, the porosity object and the container were made parallel by the same direction, and since the porosity object was inserted into the container in the state, there was a problem that insertion of a porosity object was difficult.

[0005] Although the porosity object 51 specifically needed to be inserted from the up opening into the container 52 from the lower part when the porosity object 51 was inserted in a container 52 as shown in drawing 8 (a) and (b), the pars-basilaris-ossis-occipitalis circumference of the porosity object 51 is caught in the opening edge of a container 52, and it was hard to insert it. And finally there was a problem that it could not be filled up with the porosity object 51 to the base of a container 52. Furthermore, as shown in drawing 8 (c), when heights 53 were formed in the inner base of a container 52, there was also a problem of producing the blank with which the porosity object 51 is not filled up into the pars basilaris ossis occipitalis in a container 52.

[0006] Moreover, even if a container is a complicated configuration, division composition of a container and the porosity object is carried out at the parts of a simple configuration, and it is made to attain the purpose by combining those parts in the ink cartridge mentioned by JP,8-224887,A, so that a porosity object can be inserted into a container. therefore, parts and a member -- comrades -- liquid -- since the manufacturing process of joining densely was needed, the manufacturing process was complicated

[0007] Without increasing part mark, the purpose of this invention can insert a porosity object easily to a container, and an assembly is to realize the manufacture method of an easy ink cartridge.

[0008]

[Means for Solving the Problem] In order to solve the above-mentioned trouble, in the manufacture method of the ink cartridge which inserts an abbreviation rectangular parallelepiped-like porosity object in the container of the shape of an abbreviation rectangular parallelepiped which has the ink feed holes which supply ink to an external device, invention according to claim 1 is in the state which leaned the base of a porosity object to the container base, and makes it a summary to insert a porosity object from upper surface opening of a container.

[0009] By inserting, where the base of a porosity object is leaned to a container base, the end of a porosity object is made by insertion certainly and easily from the upper surface opening in a container. Moreover,

even if heights are formed in the inner pars basilaris ossis occipitalis of a container by leaning and inserting a porosity object, the blank in a container can be reduced.

[0010] In the manufacture method of an ink cartridge according to claim 1, invention according to claim 2 prepares the heights which have ink feed holes in the base in a container, and makes it a summary to press a porosity object to the heights concerned.

[0011] If a porosity object is pressed to heights, the pore of the porosity object the portion, i.e., near ink feed holes, will be compressed, and bigger capillarity than other portions will be demonstrated by the porosity object near ink feed holes. Therefore, since it becomes easy to move the ink by which absorption maintenance is carried out to a porosity object in the direction of ink feed holes, the ink which becomes easy to supply ink to an external device, and remains in an ink cartridge is made to decrease in number.

[0012] Invention according to claim 3 makes it a summary to insert a porosity object in the state where it leaned so that a heights side might become the container which leaned toward the unilateral side side and has arranged the aforementioned heights from the center of the base in a container a path-of-insertion back side in the manufacture method of an ink cartridge according to claim 2.

[0013] If it inserts where a porosity object is leaned, since the end section of the porosity object of the heights upper part projects from upper surface opening of a container, if this projected portion is pressed, a porosity object can be certainly pressed to heights. And by pressing the porosity object in the heights circumference, the pore of a porosity object will be compressed, strong capillarity will be demonstrated, and the ink use efficiency in an ink cartridge can be raised. Moreover, the blank in a container can be reduced by leaning and inserting a porosity object in this way.

[0014] the manufacture method of the ink cartridge which invention according to claim 4 puts the side of a porosity object between the container which has the ink feed holes which supply ink to an external device with a tabular fixture, and inserts the porosity object -- setting -- the base of a porosity object -- the base configuration of a container, and abbreviation -- let it be a summary to perform the aforementioned insertion after carrying out a compression set to the same configuration

[0015] In order to make the frictional resistance produced between a porosity object and a container inside side by putting a porosity object for the side of a porosity object with a tabular fixture, and inserting the porosity object decrease, it becomes easy to make a container insert and fill up with a porosity object. moreover, the base of a porosity object -- the base configuration of a container, and abbreviation -- after carrying out a compression set to the same configuration, according to the base configuration of a container, a porosity object can be arranged by putting with a tabular fixture and inserting in a container. Therefore, a porosity object can be inserted without producing a blank and it will be efficiently filled up with a porosity object in a container. Furthermore, since the portion by which the compression set was carried out demonstrates strong capillarity, movement of the ink of a porosity object can be caused by compressing the base of a porosity object beforehand in this way.

[0016] Invention according to claim 5 makes it a summary to include the \*\*\*\*\* process which stuffs a porosity object into the path of insertion, before joining upper surface opening and the covering device material of a container after insertion of a porosity object in the manufacture method of the ink cartridge which joins covering device material to upper surface opening of a container, after inserting a porosity object in a container.

[0017] It can do, although this stuffs the porosity object which projected from upper surface opening of a container into the position which does not interfere in the covering device material on the upper surface of a container, and the junction process of covering device material can be performed easily. Moreover, since a porosity object will compress and deform if \*\*\*\*\* is performed, even if it is the container which has a configuration complicated not to mention a rectangular parallelepiped-like container by using this, it can be filled up with a porosity object to the all the corners.

[0018] Invention according to claim 6 makes it a summary for the amount of pushing of the aforementioned \*\*\*\*\* process to be 2/3 or less [ of the depth of a container ] in the manufacture method of an ink cartridge according to claim 5.

[0019] Although breakage or a burst of the pore of a porosity object will be prevented by restricting \*\*\*\*\* since the pore of a porosity object may cause breakage or a burst in a \*\*\*\*\* process if \*\*\*\*\* is made or more [ of the depth of a container ] into 2/3, it can be filled up with a porosity object to all the corners in a container.

[0020] Invention according to claim 7 makes it a summary to be below the double precision of the rib

height in which the amount of pushing of the aforementioned \*\*\*\*\* process was prepared in covering device material in the manufacture method of an ink cartridge according to claim 5 or 6.

[0021] Although breakage or a burst of the pore of a porosity object will be prevented by restricting \*\*\*\*\* since the pore of a porosity object may cause breakage or a burst in a \*\*\*\*\* process if the amount of pushing is carried out more than the double precision of the rib height of covering device material, it can be filled up with a porosity object to all the corners in a container.

[0022] Invention according to claim 8 makes it a summary to join covering device material within 1 minute after the end of the aforementioned \*\*\*\*\* process in the manufacture method of an ink cartridge according to claim 5 to 7.

[0023] If covering device material is joined to within a time until the compressed porosity object carries out original-form recovery after a \*\*\*\*\* process, since a porosity object will not interfere in covering device material, covering device material is easily joinable. And since the time which it will take before a porosity object carries out original-form recovery is less than 1 minute, by joining covering device material within 1 minute after ending a \*\*\*\*\* process, it can join covering device material easily and can be filled up with a porosity object to all the corners in a container.

[0024] In the manufacture method of an ink cartridge according to claim 5 to 8, it pushes in and invention according to claim 9 makes a summary the thing which is used for the aforementioned \*\*\*\*\* process and whose configuration of a member is the inside and analog of covering device material.

[0025] Therefore, since the arrangement receipt of the porosity object can be carried out according to the inside configuration of a container by making the pushing configuration of a \*\*\*\*\* process into the inside configuration and analog of covering device material in a \*\*\*\*\* process, it can prevent that a blank arises between covering device material and a porosity object.

[0026] Invention according to claim 10 makes it a summary to contain the porosity object over a porosity object receipt room one by one from a specific porosity object receipt room in the manufacture method of the ink cartridge which inserts a porosity object in two or more porosity object receipt rooms by which partition formation was carried out inside the container by the septum.

[0027] Therefore, it can carry out smoothly, without being interfered by the insertion work of the porosity object to the porosity object receipt room which the insertion work of the porosity object over an adjoining porosity object receipt room is not done simultaneously, and adjoins the insertion work of a porosity object.

[0028] Invention according to claim 11 makes it a summary to insert a porosity object in another porous room object receipt room which contains a porosity object inside a container at the porosity object receipt room in every other room of the direction of a list of a porosity object receipt room, and next is not inserting the porosity object in three or more porosity object receipt rooms by which partition formation was carried out at the letter of parallel in the manufacture method of the ink cartridge which inserts a porosity object by two or more septa.

[0029] A porosity object can be inserted smoothly, without being interfered by the insertion work of the porosity object to an adjoining porosity object receipt room even if a large number [ a porosity object receipt room ] if a porosity object is inserted in the receipt room where a porosity object is inserted in the receipt room in every other room of the direction of a list, and the porosity object next is not inserted when two or more porosity receipt rooms are arranged in the shape of parallel at the container.

[0030] Invention according to claim 12 makes it a summary to apply the manufacture method according to claim 1 to 9 in the manufacture method of an ink cartridge according to claim 10 or 11.

[0031] A porosity object can be easily inserted in the container which has two or more porosity object receipt rooms by this, and the assembly of an ink cartridge becomes easy.

[0032]

[Embodiments of the Invention] Hereafter, the operation form which materialized this invention is explained according to drawing 1 - drawing 2.

[0033] As shown in drawing 1 and drawing 2, the ink cartridge carried in the main part of a printer as an external device (not shown) consists of a container 11 made of abbreviation rectangular parallelepiped-like synthetic resin, a porosity object 12 represented by sponge, and covering device material 13. Into the container 11, partition formation of the porosity object receipt room 14 of plurality (this operation form five) is carried out by the septum 17 in parallel. moreover, corresponding to the porosity object receipt room 14, a pair each of ribs 21 prepare in the inside of the covering device material 13 -- having -- \*\*\*\* -

— moreover, between each rib 21 — setting — each porosity object receipt room 14 — it was alike, respectively and the position which counters is equipped with the ink inlet 15 and the vent 16

[0034] From the center at the bottom, the heights 19 equipped with the ink feed holes 18 supplied to the main part of a printer lean toward an unilateral side side, and are prepared in the base of each porosity object receipt room 14, and the upper limit of the ink feed holes 18 has become the filter wearing section 20 equipped with a filter (not shown). By forming a valve system 23 in the interior of the ink feed holes 18, and equipping a printer with a container 11, the ink supply needle by the side of the main part of a printer (not shown) is inserted into the ink feed holes 18, and a valve system 23 is wide opened with this ink supply needle.

[0035] Air passage 16a which consists of a striation, pore, etc. is prepared in the upper surface of the covering device material 13, and the above-mentioned vent 16 is open for free passage through air passage 16a with air external mouth 16b which carries out opening out of an ink cartridge. and — the upper surface of the covering device material 13 — a seal — a member — 26a — the aforementioned ink inlet 15 and a vent 16 — a seal — a member — air external mouth 16b of air passage 16a which is open for free passage with the vent 16 with 26b (not shown) is closed, respectively

[0036] Therefore, before use of an ink cartridge, the container 11 is in the sealing state and the ink in a container 11 does not carry out a liquid spill. moreover — the time of use of an ink cartridge — a seal — a member — by opening 26b, by carrying out air release of the air external mouth 16b, a vent 16 is open for free passage with the open air, and the function which supplies ink outside is demonstrated

[0037] The aforementioned porosity object 12 has many pores of \*\*\*\*\*, and insertion restoration is carried out at each porosity object receipt room 14 while it consists of elastic material. and upper surface opening and the covering device material 13 of a container 11 — oscillating welding etc. — liquid — it is joined densely The ink of an ink cartridge is poured in from the ink inlet 15, and is contained on the porosity object 12 in each porosity object receipt room 14. That is, according to the capillarity which the porosity object 12 presents, absorption maintenance is carried out at the porosity object 12, and from the porosity object 12, the ink supplied from the ink inlet 15 moves to the ink feed holes 18, and is \*\*\*\*(ed) to the main part side of a printer. By this, an ink cartridge will demonstrate the function.

[0038] Hereafter, the manufacture method of the ink cartridge in this operation gestalt is explained according to drawing 3 — drawing 7.

[0039] Now, although the porosity object 12 consists of elastic material as mentioned above, when compression by external force etc. deforms, the quality of the material with which the configuration restoration is made gradually is used.

[0040] As insertion of the porosity object 12 is shown in drawing 3 (a), as it is shown in a line crack every other [ of the direction of a list of the porosity object receipt room 14 ] room and is shown in drawing 3 (b), next, it is carried out to the porosity object receipt room 14 which is not inserting the porosity object 12.

[0041] the base configuration of the porosity object 12 inserted in the porosity object receipt room 14 as shown in drawing 4 (a) — a fixture 28 — the base configuration of the porosity object receipt room 14, and abbreviation — a compression set is carried out to the same configuration Since the compression set of the base configuration of the porosity object 12 was carried out with the fixture 28, as for the portion to which the compression set of the porosity object 12 was carried out, pore size becomes small as shown in drawing 4 (b). On the other hand, the both-sides side of the porosity object 12 is put with the tabular fixture 22, and the porosity object 12 is inserted crosswise at the porosity object receipt room 14, where press compression is carried out.

[0042] As a direction which inserts the porosity object 12 in the porosity object receipt room 14, as shown in drawing 5 (a) and (b), it leans and inserts so that the heights 19 side of the base of the porosity object receipt room 14 may become a path-of-insertion back side. The inclination is made into the state where porosity object 12 base considered as abbreviation parallel, to the virtual side 41 to which the upper limit of heights 19 and the edge of the base of the porosity object receipt room 14 which are established in the unilateral side side of the porosity object receipt room 14 by leaning are connected. As shown in drawing 5 (c), the inserted porosity object 12 will engage with heights 19 from the slanting upper part, and will be in the state where the upper-limit corner of the porosity object 12 projected from upper surface opening of the porosity object receipt room 14 [ above heights 19 ].

[0043] Furthermore, as shown in drawing 6 (a), the portion projected from upper surface opening of the porosity object receipt room 14 of the porosity object 12 inserted in the porosity object receipt room 14 is



pressed in the direction of a base of the porosity object receipt room 14. the base configuration of the porosity object 12 -- the base configuration of the porosity object receipt room 14, and abbreviation -- since it is the same configuration, the porosity object 12 will be arranged according to the configuration of heights 19 And the state where press compression of the porosity object 12 was carried out by heights 19 is maintained as it is shown in drawing 6 (b), when this press insertion is performed.

[0044] On the occasion of press of the upper surface of the porosity object 12 mentioned above, as shown in drawing 7 (a) and (b), the press machine 25 performs \*\*\*\*\* which presses the porosity object 12 in the direction of a base from upper surface opening of the porosity object receipt room 14. To the depth of the porosity object receipt room 14, this amount of pushing is 2/3 or less, and carries out to below the double precision of the height of the rib 21 of the covering device material 13, and the press machine 25 which has the pushing side of the inside configuration of the covering device material 13 and an analog is used for this \*\*\*\*\* process.

[0045] After doing the above work every other [ of the direction of a list of the porosity object receipt room 14 ] room, it carries out similarly to the porosity object receipt room 14 which is not inserting the porosity object 12.

[0046] And if the porosity object 12 is pressed and inserted in each porosity object receipt room 14 and press compression is carried out according to a \*\*\*\*\* process, with the passage of time, the porosity object 12 will carry out prototype recovery, and will be restored to upper surface opening of the porosity object receipt room 14 in about 1 minute. therefore, after performing the \*\*\*\*\* process of the porosity object 12 over each porosity object receipt room 14 to begin, as shown in drawing 7 (c), upper surface opening of each porosity object receipt room 14 is closed within 1 minute -- as -- upper surface opening of a container 11 -- receiving -- the covering device material 13 -- oscillating welding -- liquid -- the junction process joined densely is performed The receipt process of the porosity object 12 over the container 11 of an ink cartridge is ended by the above work. And after the end of the work, it restores so that the porosity object 12 may be filled up with the crevice in the porosity object receipt room 14. Therefore, if ink is supplied in the porosity object receipt room 14 from the ink inlet 15, absorption maintenance of the ink will be carried out at the porosity object 12. then, a seal -- the ink inlet 15 and air external mouth 16b are covered by Members 26a and 26b, respectively, and a container 11 will be in a sealing state

[0047] According to the above-mentioned operation form, the following effects (feature) are done so.

[0048] - All the porosity objects 12 can be smoothly inserted into a container 11 by setting time difference and performing 2 times of the insertion processes which insert a porosity object in the porosity object receipt room 14 which inserts the porosity object 12 every other [ of the direction of a list of the porosity object receipt room 14 ] room, and next is not inserting the porosity object 12. That is, the insertion work of the porosity object 12 can be smoothly done on the number of the porosity object receipt rooms 14 not related, without being interfered by the insertion work of the porosity object 12 to the adjoining porosity object receipt room 14 even if a large number [ the porosity object receipt room 14 ].

[0049] - a fixture 28 -- using -- the base configuration of the porosity object receipt room 14, and abbreviation -- since the porosity object 12 which carried out the compression set to the same configuration is inserted in the porosity object receipt room 14, the porosity object 12 can be arranged according to the configuration of the base of the porosity object receipt room 14 Therefore, the porosity object 12 can be inserted into the porosity object receipt room 14, without producing most blanks in a container 11, and it can be efficiently filled up with the porosity object 12 in the porosity object receipt room 14. Therefore, without increasing part mark not to mention the container 11 of a simple configuration, the porosity object 12 can be easily inserted also in the container 11 of a complicated configuration, and even all the corners of the porosity object receipt room 14 can be filled up with the porosity object 12.

[0050] - Pore size becomes small by compressing the portion of the porosity object 12 by which the compression set was carried out using the fixture 28, and the pressure welding was carried out to heights 19. Therefore, big capillarity will be demonstrated compared with the portion of other porosity objects 12 which are not compressed. Thereby, the ink by which absorption maintenance was carried out at the porosity object 12 can flow in the direction of the heights 19 which have the ink feed holes 18, and can \*\*\*\* and use efficiently the ink supplied in the porosity object receipt room 14 to the exterior.

[0051] - The both-sides side of the porosity object 12 is put with the tabular fixture 22, and where press compression is carried out, in order to insert the cross direction of the porosity object 12 in the porosity

object receipt room 14, contact pressure with the inside wall of the porosity object receipt room 14 is made to decline, and it becomes easy to insert the porosity object 12 into the porosity object receipt room 14.

[0052] – Where the base of the porosity object 12 is leaned to the base of a container 11, it can insert by inserting the porosity object 12 from upper surface opening of a container 11, without almost interfering in the end of the porosity object 12 easily at upper surface opening of a container 11. For this reason, insertion of the porosity object 12 becomes very easy.

[0053] – It leans so that the heights 19 side of the base of the porosity object receipt room 14 may become a path-of-insertion back side. Namely, if it inserts to the virtual side 41 to which the end section of the upper limit of heights 19 and the base of the porosity object receipt room 14 which are established in the unilateral side side of the porosity object receipt room 14 by leaning is connected where porosity object 12 base is considered as abbreviation parallel A porosity object can be easily inserted also in the porosity object receipt room 14 of a complicated configuration where heights 19 exist. For this reason, while being smoothly filled up with the porosity object 12 in the porosity object receipt room 14, along the base of the porosity object receipt room 14, it is easy to be settled and the porosity object 12 can be inserted.

[0054] – If the porosity object 12 is inserted in the porosity object receipt room 14, the porosity object 12 will engage with heights 19 in the state where it inclined, and will be in the state where it projected from upper surface opening of the porosity object receipt room 14 [ above heights 19 ]. When the porosity object 12 is pressed [ of the porosity object receipt room 14 ] in the direction of a base from upper surface opening in this state, it will deform according to the configuration of heights 19, press compression of the porosity object 12 will be carried out to heights 19, and the pressure welding of the porosity object 12 will be carried out to heights 19. And as for the porosity object 12 of the portion which is engaging with heights 19, pore size becomes small. Therefore, since it will become large if the capillarity of the porosity object 12 has small pore size and compressibility is large, the ink supplied to the porosity object receipt room 14 becomes easy to flow in the heights 19 direction, and can \*\*\*\* ink outside without futility.

[0055] – When the porosity object receipt room 14 is carrying out the complicated configuration, it is difficult to fill up the porosity object receipt room 14 with the porosity object 12 to all the corners. However, by performing a \*\*\*\*\* process, when the porosity object 12 deforms according to the configuration of the porosity object receipt room 14, it can be filled up with the porosity object 12 to all the corners in the porosity object receipt room 14. Therefore, insertion restoration of the porosity object 12 can be easily carried out to the container 11 of a complicated configuration.

[0056] – The porosity object 12 has a possibility that the pore of the porosity object 12 may be exploded or damaged, when press receives too much compression pressure. Therefore, the pore of the porosity object 12 can perform \*\*\*\*\* now by being 2/3 or less and regulating the amount of pushing below the double precision of the height of the rib 21 of the covering device material 13 to the depth of the porosity object receipt room 14, without carrying out burst or breakage.

[0057] – The pushing configuration of the press machine 25 in a \*\*\*\*\* process is written to the inside configuration and analog of the covering device material 13, after performing a junction process, it becomes easy to arrange the porosity object 12 according to the configuration of the covering device material 13, and it becomes easy to be filled up with the porosity object 12 according to covering device material 13 configurations. Therefore, absorption maintenance being promptly carried out on the approaching porosity object 12, and ink flowing backwards in the case of the ink supply to the porosity object 12, and carrying out a liquid spill of the ink poured in from the ink inlet 15 from the ink inlet 15 is lost.

[0058] – Before the porosity object 12 in the porosity object receipt room 14 carries out configuration restoration and reaches the position of the covering device material 13, junction can be easily performed by performing the junction process of the covering device material 13, without being interfered by the porosity object 12.

[0059] In addition, the aforementioned operation form of this invention can also carry out change implementation as follows.

[0060] – Where the porosity object 12 is put with the tabular fixture 22, in case you insert in the porosity object receipt room 14, insert in the state where it put with the tabular jig also from other the direction of a transverse plane, for example, direction, of the porosity object 12. An insertion process will become still

easier if it does in this way.

[0061] - Apply this invention to the container 11 with which only a couple has the porosity object receipt room 14. Therefore, in this case, insertion of the porosity object 12 sets time difference, and is performed one by one to both the porosity object receipt room 14, and the same effect as the aforementioned operation form can be acquired.

[0062] - Apply this invention to the container 11 which has only one porosity object receipt room 14. Therefore, it is the same as that of the aforementioned operation form for insertion of the porosity object 12 to be easy to the porosity object receipt room 14 in this case.

[0063]

[Effect of the Invention] A porosity object can be easily inserted also in the container of a complicated configuration, without increasing part mark, in order according to invention according to claim 1 to lean and to insert a porosity object.

[0064] Since a porosity object is pressed and inserted [ according to invention according to claim 2 ] in heights in addition to an effect of the invention according to claim 1, the ink supplied in the container can be used efficiently.

[0065] since according to invention according to claim 3 in addition to an effect of the invention according to claim 2 a porosity object is leaned and inserted so that the heights side at the base of a container may become a path-of-insertion back side, the ink which could insert the porosity object also in the container of a complicated configuration easily, without increasing part mark, and was supplied in the container can be used efficiently

[0066] according to invention according to claim 4 -- the base configuration of a container, and abbreviation -- since it can arrange according to the configuration of a container while insertion of a porosity object becomes easy in order to insert in a container after carrying out a compression set to the same configuration, the ink which could be filled up with the porosity object to all the corners in a container, and was supplied in the container can be used efficiently

[0067] Before joining covering device material after inserting a porosity object in addition to an effect of the invention according to claim 1 to 4, you can make it easily filled up with a porosity object to all the corners of a container by performing the \*\*\*\*\* process which stuffs a porosity object into the path of insertion according to invention according to claim 5.

[0068] according to invention according to claim 6 -- an effect of the invention according to claim 5 -- in addition, a \*\*\*\*\* process can be performed, without the amount of pushing of a \*\*\*\*\* process breaking or bursting the pore of a porosity object by having carried out to 2 parts 3 or less [ of the depth of a container ]

[0069] a \*\*\*\*\* process can be performed without according to invention according to claim 7, in addition to an effect of the invention according to claim 5 or 6, breaking or bursting the pore of a porosity object, when the amount of pushing carried out to below the double precision of the rib height of covering device material

[0070] according to invention according to claim 8 -- an effect of the invention according to claim 5 to 7 -- in addition, the junction process of covering device material can be easily performed by joining covering device material to less than one part after ending a \*\*\*\*\* process

[0071] according to invention according to claim 9 -- an effect of the invention according to claim 5 to 8 -- adding -- pushing in -- the configuration of a member -- the container inside configuration of covering device material, and abbreviation -- by having presupposed that it is the same, it becomes easy to be filled up with a porosity object according to the configuration of covering device material, and the junction process of covering device material can be performed easily

[0072] According to invention according to claim 10, an insertion process can be smoothly performed by containing the porosity object over a porosity object receipt room one by one from a specific porosity object receipt room.

[0073] According to invention according to claim 11, a porosity object is contained in the porosity object receipt room in every other room of the direction of a list, and since a porosity object is inserted in the porous room object receipt room which next is not inserting the porosity object, an insertion process can be performed smoothly.

[0074] according to invention according to claim 12, in addition to an effect of the invention according to claim 1 to 9, a porosity object can be easily inserted in the container which has two or more porosity

object receipt rooms, the assembly of an ink cartridge becomes easy, and an insertion process can be performed further smoothly well

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[Translation done.]

**\* NOTICES \***

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- 3.In the drawings, any words are not translated.

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**DESCRIPTION OF DRAWINGS**

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**[Brief Description of the Drawings]**

**[Drawing 1]** The perspective diagram of an ink cartridge.

**[Drawing 2]** The cross section of an ink cartridge.

**[Drawing 3]** The reference cross section showing the insertion process which inserts a porosity object every unilocular.

**[Drawing 4]** The reference cross section which performs the post-insertion process made to transform a porosity object.

**[Drawing 5]** The reference cross section showing the insertion process which leaned the path of insertion.

**[Drawing 6]** The reference cross section showing press insertion.

**[Drawing 7]** The reference cross section showing a \*\*\*\*\* process.

**[Drawing 8]** The reference cross section showing the manufacture method of the ink cartridge in the former.

**[Description of Notations]**

- 11 -- Container
- 12 -- Porosity object
- 13 -- Covering device material
- 14 -- Porosity object receipt room
- 17 -- Septum
- 18 -- Ink feed holes
- 19 -- Heights
- 21 -- Rib
- 22 -- Tabular fixture

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**[Translation done.]**

## \* NOTICES \*

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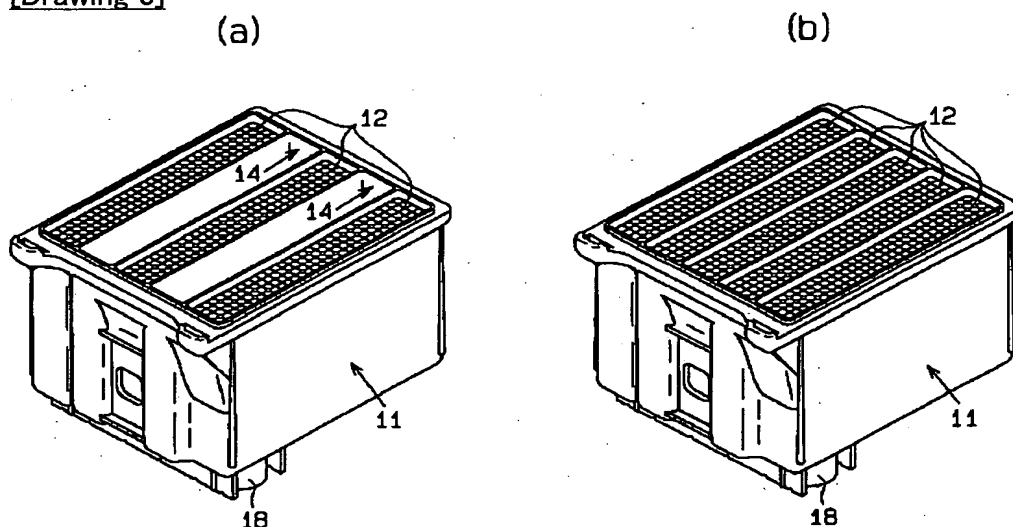
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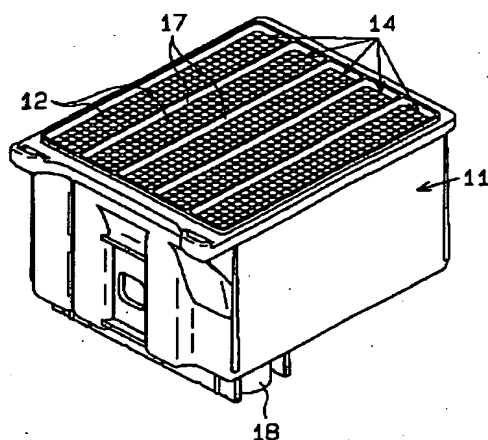
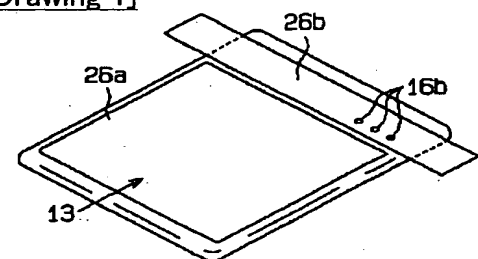
3.In the drawings, any words are not translated.

## DRAWINGS

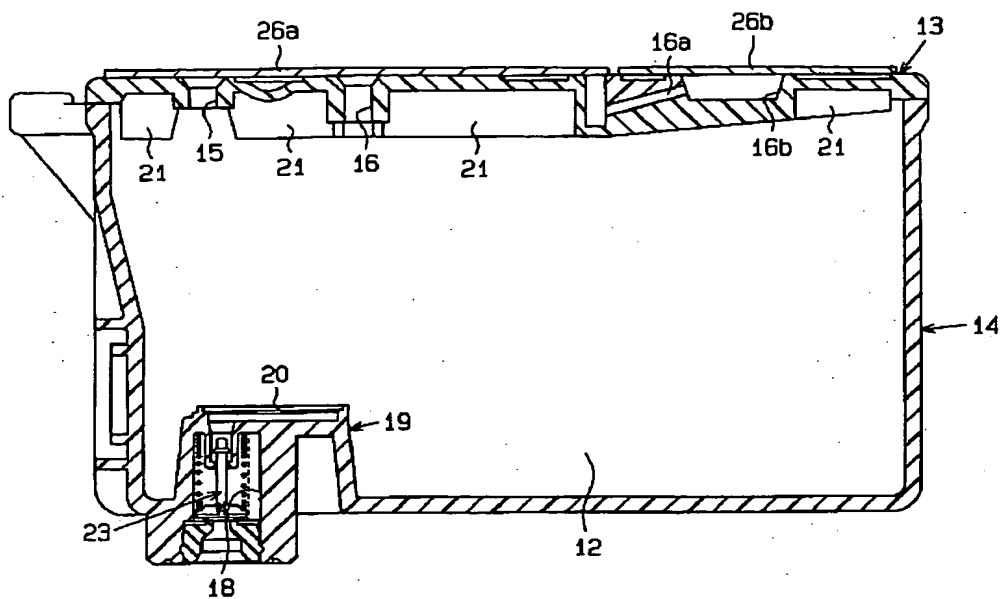
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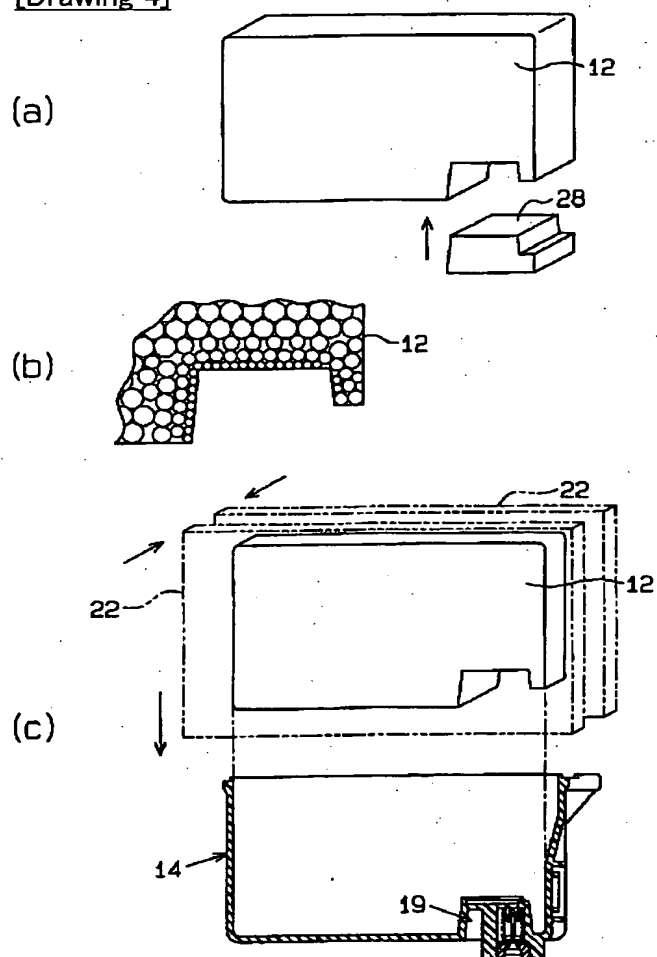
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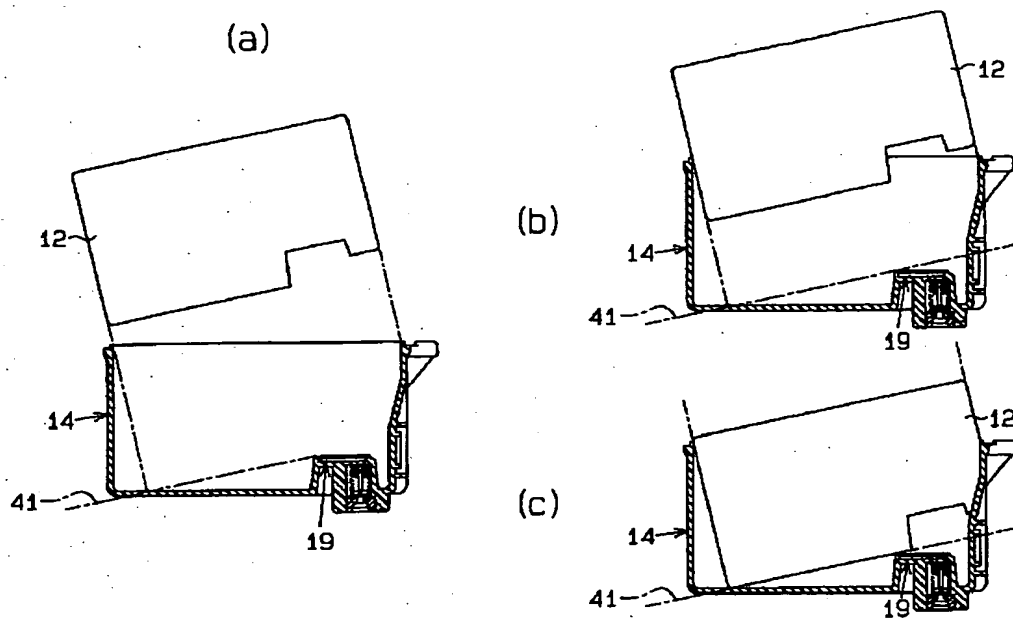
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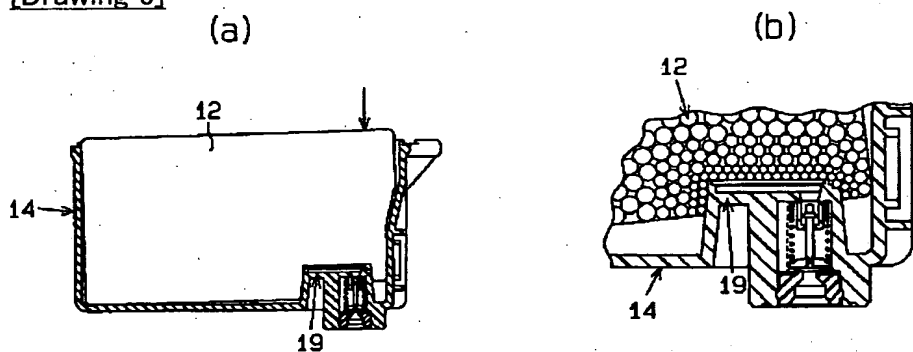
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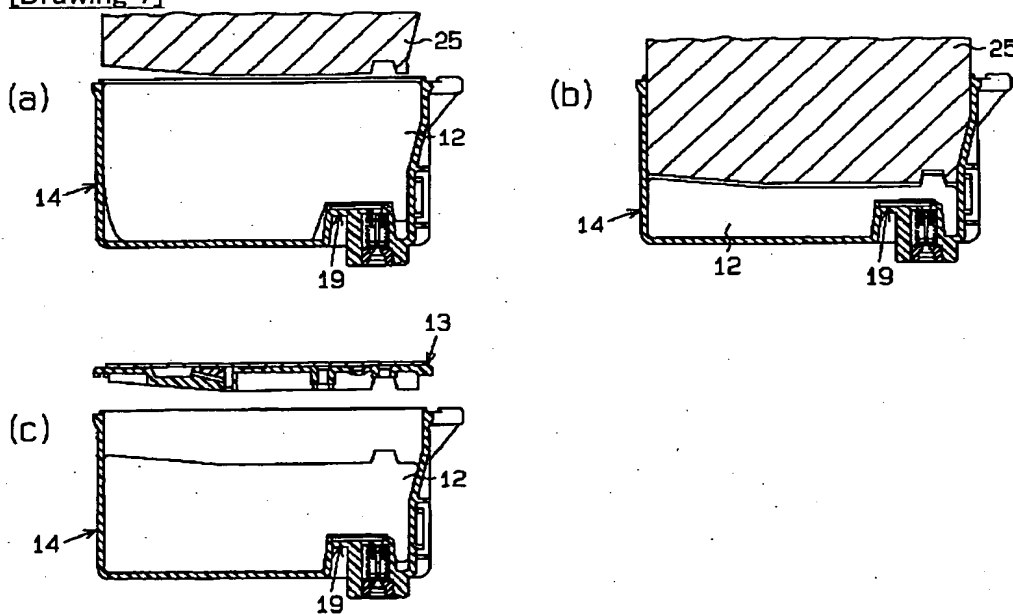
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[Drawing 6]

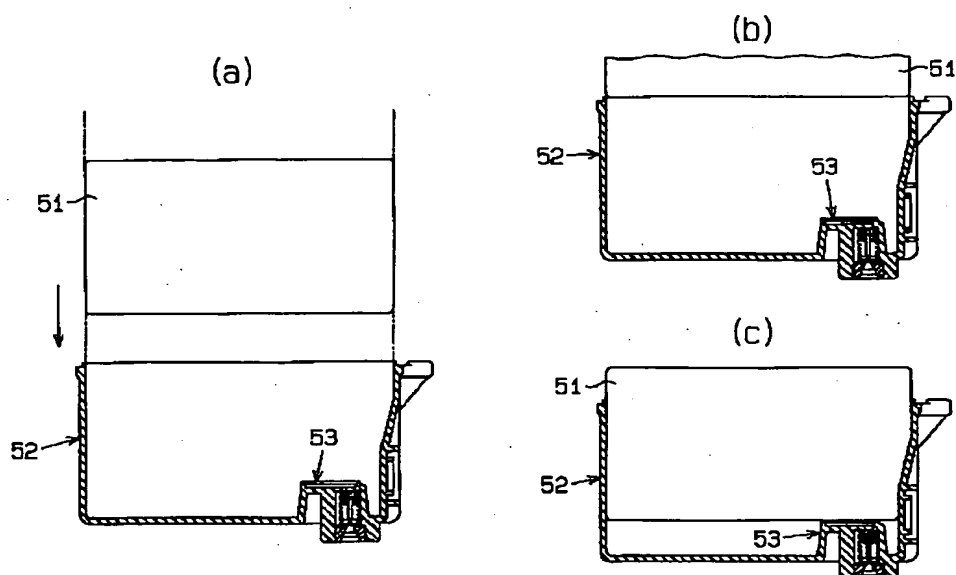


[Drawing 7]



[Drawing 8]





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[Translation done.]